# Straw-Loft Poultry House

## Directions and Plans for Building

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**Circular 501**

UNIVERSITY OF ILLINOIS · COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION AND EXTENSION
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# The Straw-Loft Poultry House

By H. H. Alp and W. A. Foster[a]

MODERATE and fairly uniform temperatures can generally be maintained more easily in a straw-loft poultry house than in some of the other common types, because of the cheap insulation afforded by the straw. This factor alone is worth much in a climate so variable as that of Illinois, because losses in egg production often follow radical temperature changes.

If sanitary conditions are maintained in a straw-loft house and sparrows and pigeons are kept out, there should be no trouble from lice or mites getting into the straw. The amount of straw used in the loft varies, but as a rule about 2 to 3 feet of loose straw is sufficient. The straw may be left in the loft indefinitely.

**Locating the house.** In locating any poultry house the factors of major importance are a well-drained soil, good circulation of air, southern exposure, protection from prevailing winds in winter, relation to other farm buildings, allowance for future expansion, convenience in daily care and management, and the arrangement of poultry yards.

A double-yarding system should be provided so that half the range area may be in crops each year. This practice will aid materially in reducing losses in the flock from parasites and disease.

**Size of house to build.** Build the house to fit your flock, or the flock you expect to have. There should be not less than 4 square feet of floor space for each bird. The actual number that can safely be housed depends partly of course on the size of the breed; but crowding as many as 130 or 140 birds even of the smaller breeds into a 20′-by-20′ house usually leads to dampness, disease, and low egg production.

**Concrete foundation walls.** Make foundation walls 8 inches thick, extending 1 foot below the ground, and extending above the ground enough to allow for a 6- or 8-inch fill for the floor. Use a 1:2.5:3.5 mix containing 6½ gallons of water per sack of cement. Reinforce the foundation walls against cracking, settling, and upheaval by embedding a ½-inch rod in the concrete near the bottom. Place ½″ x 12″ sill bolts in the concrete 6 feet apart, 2 inches from the outside edge of the wall and extending 3 inches above the top.

*Fill for Floor.*—To insure a dry floor, use a gravel or cinder fill, extending 6 or 8 inches above ground level. Good drainage is essential for a dry floor. Allow fill to settle thoroly before placing concrete.

**One-course concrete floor.** Make floor 3 inches thick and place

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full thickness in one operation, using a 1:2:3 mix containing 5½ gallons of water per sack of cement.

Use clean sand and gravel. After placing the concrete, allow it to stand 2 or 3 hours until it has stiffened enough to permit finishing with a wood float. To permit proper curing of the concrete, keep floor surface damp for 7 to 10 days by covering with moist sand or earth.

**Frame construction.** Construct framework for front and rear walls on the ground in units. Raise each unit into position and brace securely; then build side framing and rafters in place.

*Sill.*—Use a single 2″x 4″ member bolted to foundation wall by ½″x 12″ bolts embedded in concrete every 6 feet.

*Studding.*—Use 2″x 4″ members 24″ apart, on centers, and doubled at corners.

*Plates.*—The plates are 2″x 4″ members doubled in front and rear.

*Siding.*—Six-inch car siding placed vertically is recommended. To prevent cracks paint joints as boards are nailed in place. Use 6d nails, fitting joints closely.

*Post and Girder.*—4″x 4″ posts spaced as on plan stiffen roof frame and loft. Girder, 2″x 8″. If 2″x 4″ rafters are used, post and girder are necessary. Optional with 2″x 6″ rafters.

*Rafters.*—Use 2″x 4″ rafters 14 feet long, spaced 2 feet apart.

*Ridge Board.*—Use 2″x 6″ ridge board with 4″x 4″ post under midpoint.

*Roof Sheathing.*—For composition roof, use 6-inch flooring boards. For sheet metal roof, use 1″x 4″ roof boards spaced 2 feet apart.

*Roofing.*—Use 3-ply slate-surfaced roll roofing or 1¼″ corrugated galvanized sheet steel roofing 26 gage, 2-oz. coating, Seal of Quality. Fasten sheet steel roofing with 2-inch galvanized barbed nails. Drive nails thru top of every fourth corrugation, using lead head roofing nails.

*Windows.*—For front windows use 4- or 6-light 9″x 12″ barn sash; for rear windows use 3-light 9″x 12″ basement sash. Cover windows with ¼-inch mesh hardware cloth.

*Droppings Board.*—Build droppings board in two or more sections in form of tables. Use 6-inch flooring boards.

*Roosts.*—Make roosts in two sections 30″ to 36″ off floor. For perches use 2″x 2″ lumber slightly rounded at the top, 14″ apart, leaving 10″ clearance at back and 6″ at front. Nail 1½-inch poultry netting to underside of perches. Support on 4½″x 10″ wagon bolts.

*Insulation.*—For additional warmth, line wall behind roosts with 6-inch flooring or some other insulating material.

*Straw Loft.*—Use 2″x 4″ members spaced 4 feet apart on which are laid 1″x 6″ boards and woven wire to support straw loft. Nail 1″x 6″ braces from rafters to 2″x 4″ members for needed strength.

## Materials for 20′-by-20′ Illinois Straw-Loft Poultry House

*(Have your lumber dealer estimate costs)*

**Foundation:** 1:2.5:3.5 mix

Cement, 24 sacks ..... @ ..... $.....
Sand, 2¼ cubic yards ..... @ ..... $.....
Gravel, 3 cubic yards ..... @ ..... $.....

**Floor:** 3″ thick, 1:2:3 mix

Cement, 23 sacks ..... @ ..... $.....
Sand, 1¾ cubic yards ..... @ ..... $.....
Gravel, 2¾ cubic yards ..... @ ..... $.....

**Lumber list:**

Sills and plates, 10 pcs. 2″ x 4″ x 20′ ..... @ ..... $.....
Studding, 43 pcs. 2″ x 4″ x 6′ ..... @ ..... $.....
Cut-in girts, 5 pcs. 2″ x 4″ x 12′ ..... @ ..... $.....
Window sills, 4 pcs. 1″ x 6″ x 10′ ..... @ ..... $.....
Posts, 2 pcs. 4″ x 4″ x 14′ ..... @ ..... $.....
Girder, 1 pc. 2″ x 8″ x 20′ ..... @ ..... $.....
Ridge board, 1 pc. 2″ x 6″ x 22′ ..... @ ..... $.....
Rafters, 22 pcs. 2″ x 4″ x 14′. (If asbestos-cement shingles are used, substitute 2″ x 6″ rafters.) ... @ ..... $.....
Roof sheathing (composition or sheet metal, *optional*)
For composition roof, 675 board feet of 1″ x 6″ flooring ..... @ ..... $.....
For sheet metal roof, 120 board feet of 1″ x 4″ roof boards ..... @ ..... $.....
Siding:
200 pcs. 1″ x 6″ car siding 7′ long ..... @ ..... $.....
Inside sheathing, 220 bd. feet 1″ x 6″ flooring ..... @ ..... $.....
Joists (supports for straw loft) 4 pcs. 2″ x 4″ x 20′ .. @ ..... $.....
Boards for straw loft:
14—1″ x 4″ 12′ long ..... @ ..... $.....
14—1″ x 4″ 8′ long ..... @ ..... $.....
Roofing (composition or sheet metal, *optional*)
Composition, 6 rolls of 3-ply slate surface roll roofing ..... @ ..... $.....
Sheet metal, 21 sheets of 1¼″ corrugated galvanized steel roofing, 26 gage, 12′ long ..... @ ..... $.....
30 feet of corrugated ridge roll ..... @ ..... $.....
Trim, 100 lineal feet 1″ x 4″ B or better ..... @ ..... $.....
Droppings board, 24 pieces flooring, 1″ x 6″ x 10′ ... @ ..... $.....
Droppings board and roosts supports, 8 pcs. 2″ x 4″ x 10′ ..... @ ..... $.....
Perch bars, 8 pcs. 2″ x 2″ x 10′ ..... @ ..... $.....
Sash:
(Front) 10 four-light 9″ x 12″ (barn type) ..... @ ..... $.....
(Rear) 3 three-light 9″ x 12″ (basement type) .. @ ..... $.....
10 metal frames, "air flow" type, including ventilating shields, complete, for 4-light sash. Make frames for 3-light sash ..... @ ..... $.....
Hardware and nails additional

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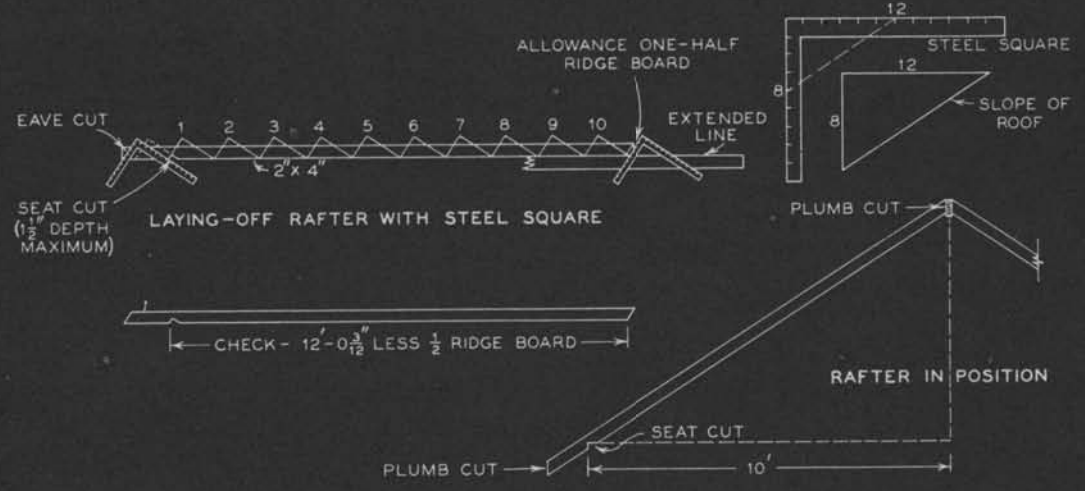
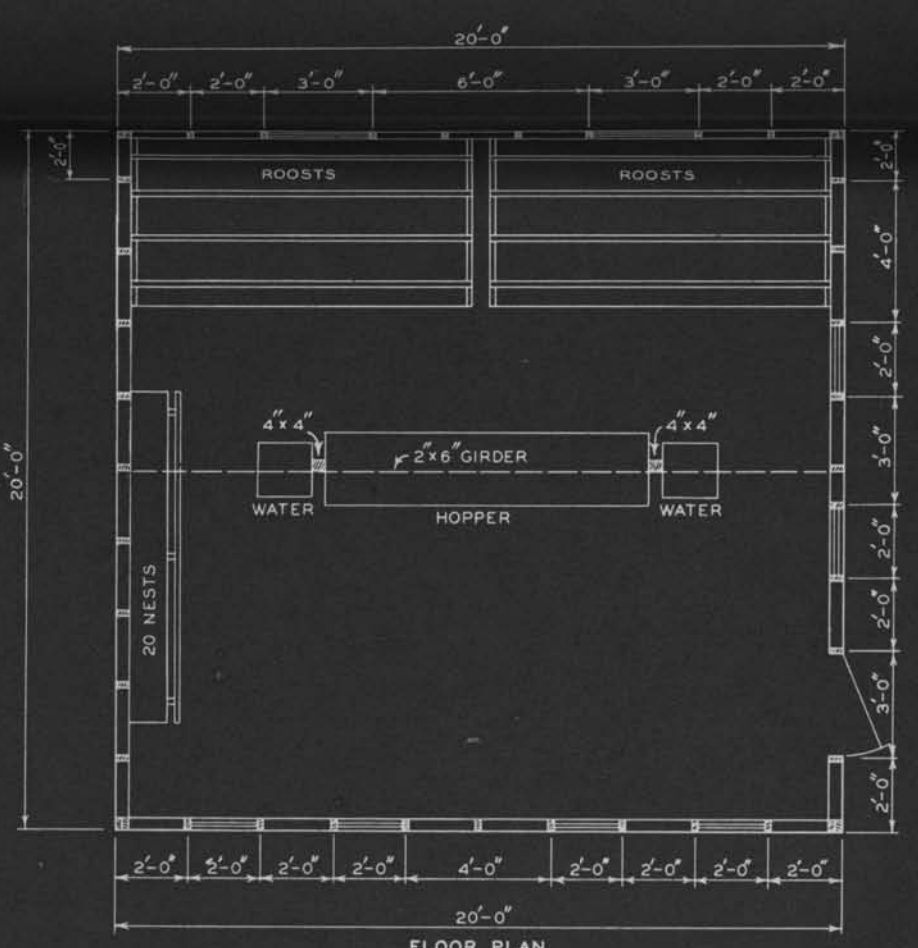


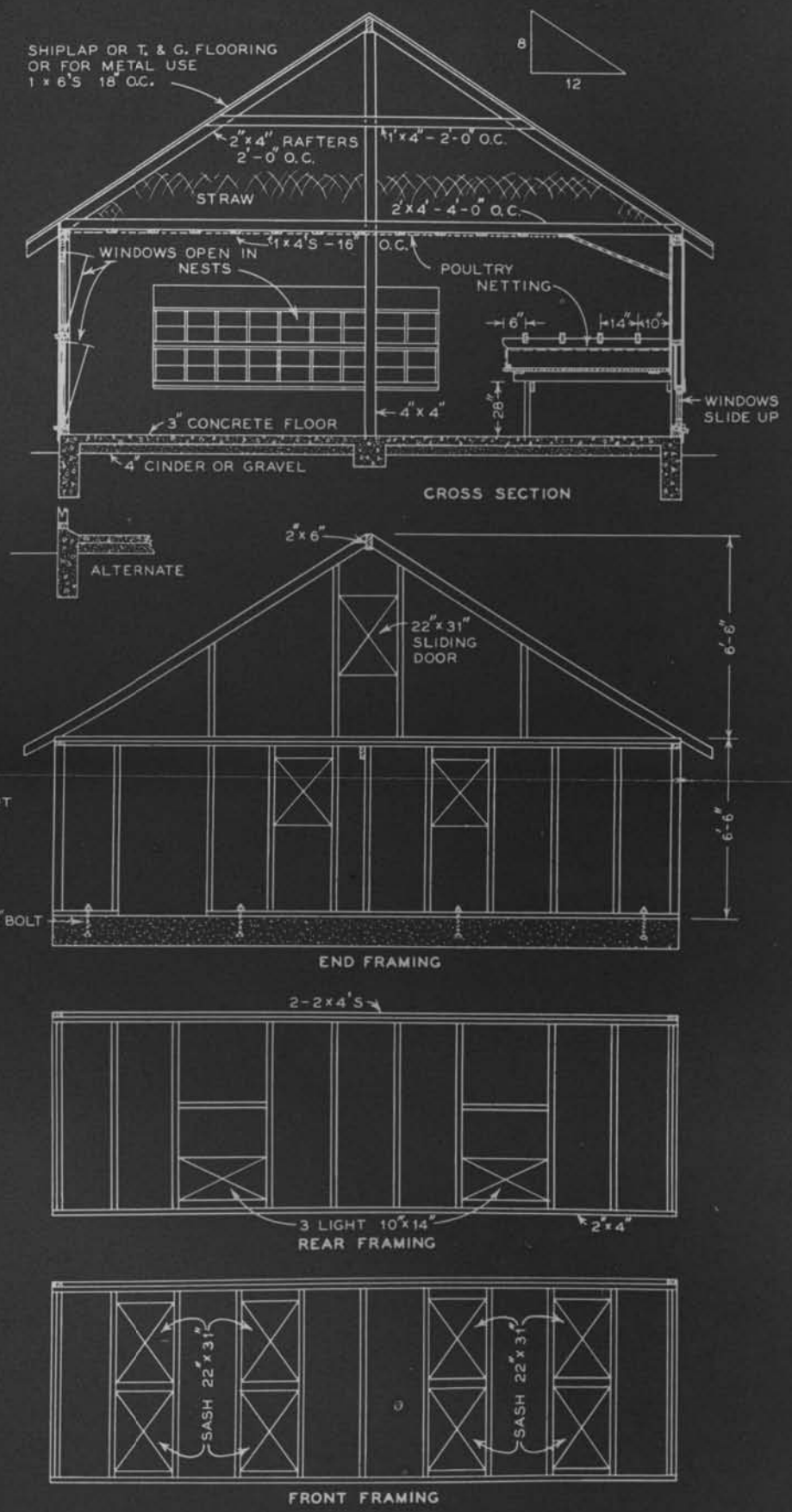

The length of the rafter from the seat cut to the ridge is determined by taking as many measurements with the steel square as there are feet from the plate (or seat) to a plumb line under the ridge—in this example, 10 feet and hence 10 measurements. Since the slope of the roof is in the proportion 8 to 12, the measurements are made by using the diagonal distance from the 8" mark on the outside of one arm of the square to the 12" mark on the outside of the other arm. To use this method the slope of the roof must be in terms of "twelfths," letting the "12" represent the horizontal distance from plate to ridge plumb line.




FLOOR PLAN


**SASH SIZES**

4 LIGHT 9" x 12" 22" x 29"
6 LIGHT 9" x 12" 22" x 41"
3 LIGHT 10" x 12" 34" x 17"




## STRAW-LOFT POULTRY HOUSE

SCALE 3/16" = 1'-0"

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